

SPECIFICATION

IN THE TITLE

Please replace the title of the application with the following amended title.

[Method of addressing messages, method of establishing wireless communications, and communications system] Method and apparatus to manage RFID tags

IN THE DESCRIPTION

In compliance with 37 C.F.R. §1.177, please replace the paragraph at Col. 1, line 10, after the heading “Cross Reference to Related Application”, with the following amended paragraph.

More than one reissue application has been filed for the reissue of U.S. Patent No. 6,307,848, which reissue applications are the initial, present reissue Application No. 10/693,697 filed October 23, 2003, a continuation reissue Application No. 11/865,580 filed October 1, 2007, a continuation reissue Application No. 11/865,584 filed October 1, 2007, and a further continuation reissue Application No. 12/604,329 filed October 22, 2009, where the present application [This] is a [Continuation] reissue application of U.S. Patent No. 6,307,848, issued from U.S. patent application Ser. No. 09/773,461, filed Jan. 31, 2001, which is a continuation application of U.S. patent application Ser. No. 09/551,304, filed Apr. 18, 2000, [and] titled “Method of Addressing Messages, and Establishing Communications Using a Tree Search Technique That Skips Levels” and now U.S. Pat. No. 6,226,300, which in turn is a continuation of U.S. patent application Ser. No. 09/026,045, filed Feb. 19, 1998, which is now U.S. Pat. No. 6,072,801.

Please replace the paragraph in Col. 2, lines 57-62, with the following amended paragraph.

An electronic identification system which can be used as a radio frequency identification device, arbitration schemes, and various applications for such devices are described in detail in commonly assigned U.S. patent application Ser. No. 08/705,043, filed Aug. 29, 1996 and now U.S. Pat. No. 6,130,602, and incorporated herein by reference.

At Col. 3, line 36, in the “Summary of the Invention” section, please insert the following paragraph.

In one embodiment, an interrogator may send a first command indicating a first value and a first memory range, and a second command indicating second value and a second memory range. The first memory range may differ from the second memory range by at least two bits. RFID tags may compare the first and second values to corresponding values stored in the tags to determine if the tags are selected. Selected tags may respond to the interrogator with independently generated random numbers.

Please replace paragraphs from Col. 3, line 65 to Col. 4, line 19, with the following amended paragraphs.

FIG. 1 illustrates a wireless identification device 12 in accordance with one embodiment of the invention. In the illustrated embodiment, the wireless identification device is a radio frequency data communication device 12, and includes RFID circuitry 16. In the illustrated embodiment, the RFID circuitry is defined by an integrated circuit as described in the above-incorporated patent application Ser. No. 08/705,043, filed Aug. 29, 1996 and now U.S. Pat. No. 6,130,602. Other embodiments are possible. A power source 18 is connected to the integrated circuit 16 to supply power to the integrated circuit 16. In one embodiment, the power source 18 comprises a battery. The device 12 further includes at least one antenna 14 connected to the circuitry 16 for wireless or radio frequency transmission and reception by the circuitry 16.

The device 12 transmits and receives radio frequency communications to and from an interrogator 26. An exemplary interrogator is described in commonly assigned U.S. patent application Ser. No. 08/907,689, filed Aug. 8, 1997 and now U.S. Pat. No. 6,289,209, which is incorporated herein by reference. Preferably, the interrogator 26 includes an antenna 28, as well as dedicated transmitting and receiving circuitry, similar to that implemented on the integrated circuit 16.

Please replace the paragraph in Col. 4, lines 40-45, with the following amended paragraph.

The radio frequency data communication device 12 can be included in any appropriate housing or packaging. Various methods of manufacturing housings are described in commonly assigned U.S. patent application Ser. No. 08/800,037, filed Feb. 13, 1997, and now U.S. Pat. No. 5,988,510, which is incorporated herein by reference.

Please replace the paragraph in Col. 5, lines 5-10, with the following amended paragraph.

The circuitry 16 further includes a backscatter transmitter and is configured to provide a responsive signal to the interrogator 26 by radio frequency. More particularly, the circuitry 16 includes a transmitter, a receiver, and memory such as is described in U.S. patent application Ser. No. 08/705,043, filed Aug. 29, 1996 and now U.S. Pat. No. 6,130,602.

Please replace the paragraph in Col. 12, lines 34-38, with the following amended paragraph.

Aloha methods are described in a commonly assigned patent application Serial No. 09/026,248, filed February 19, 1998, now U.S. Patent No. 6,275,476B1 [(attorney docket number MI40-089)] naming Clifton W. Wood, Jr. as an inventor, titled "Method of Addressing Messages and Communications System," [filed concurrently herewith, and] which is incorporated herein by reference.

CERTIFICATE OF CORRECTION

Please incorporate the corrections made in the Certificate of Correction issued September 10, 2002, as listed below (MPEP 1411.01).

On the title page, please replace the inventorship with the following:

Clifton W. Wood, Jr., Boise, ID (US) and Don Hush, Tijeras, NM (US)

Please replace the paragraph in Col. 3, lines 39-41 with the following:

Preferred embodiments of the invention are described below the reference to the following accompanying drawings.

Please replace the paragraph in Col. 4, lines 20-28 with the following:

Generally, the interrogator 26 transmits an interrogation signal or command 27 via the antenna 28. The device 12 receives the incoming interrogation signal via its antenna 14. Upon receiving the signal 27, the device 12 responds by generating and transmitting a responsive signal or reply 29. The responsive signal 29 typically includes information that uniquely identifies, or labels the particular device 12 that is transmitting, so as to identify any object or person with which the device 12 is associated.

Please replace the paragraph in Col. 4, lines 47-52 with the following:

FIG. 2 shows but one embodiment in the form of a card or badge 19 including the radio frequency data communication device 12, and a housing 11 including plastic or other suitable material. In one embodiment, the front face of the badge has visual identification features such as graphics, text, information found on identification or credit cards, etc.

Please replace the paragraph between Col. 6, line 66 and Col. 7, line 13 with the following:

Next, the interrogator sets AMASK to 0001 and AVALUE to 0000 and transmits an identify command. Both devices 12 in the field have a zero for their least significant bit, and $(AMASK \& AVALUE) == (AMASK \& RV)$ will be true for both devices 12. For the device 12 with a random value of 1100, the left side of the equation is evaluated as follows $(0001 \& 0000) = 0000$. The right side is evaluated as $(0001 \& 1100) = 0000$. The left side equals the right side, so the equation is true for the device 12 with the random value of 1100. For the device 12 with a random value of 1010, the left side of the equation is evaluated as $(0001 \& 0000) = 0000$. The right side is evaluated as $(0001 \& 1010) = 0000$. The left side equals the right side, so the equation is true for the device 12 with the random value of 1010. Because the equation is true for both devices 12 in the field, both devices 12 in the field respond, and there is another collision.

Please replace the paragraph in Col. 7, lines 51-67 with the following:

For instance, consider a function that has four statements (numbered 1,2,3,4) in it, and the second statement is a recursive call. Assume that the fourth statement is a return statement. The first time through the loop (iteration 1) the function executes the statement 2 and (because it is a recursive call) calls itself causing iteration 2 to occur. When iteration 2 gets to statement 2, it calls itself making iteration 3. During execution in iteration 3 of statement 1, assume that the function does a return. The information that was saved on the stack from iteration 2 is loaded and the function resumes execution at statement 3 (in iteration 2), followed by the execution of statement 4 which is also a return statement. Since there are no more statements in the function, the function de-recurses to iteration 1. Iteration 1, had previously recursively called itself in statement 2. Therefore, it now executes statement 3 (in iteration 1). Following that it executes a return at statement 4. Recursion is known in the art.

Please replace the paragraph in Col. 10, lines 11-17 with the following:

A second predetermined number of bits are established to be used for the random values RV. The devices 12 are caused to select random values, RV. This is done, for example, by the interrogator 26 sending an appropriate command. Respective devices choose random values independently of random values selected by the other devices 12. Random number generators are known in the art.

Please replace the paragraph between Col. 10, line 65 and Col. 11, line 3 with the following:

The above described code for depth-first traversal is modified to provide for level skipping by increasing the number of recursive calls as shown below. For example, the above described code for depth-first traversal is replaced with code such as the following to provide for depth-first traversal employing level skipping.